

Land Processes Distributed Active Archive Center



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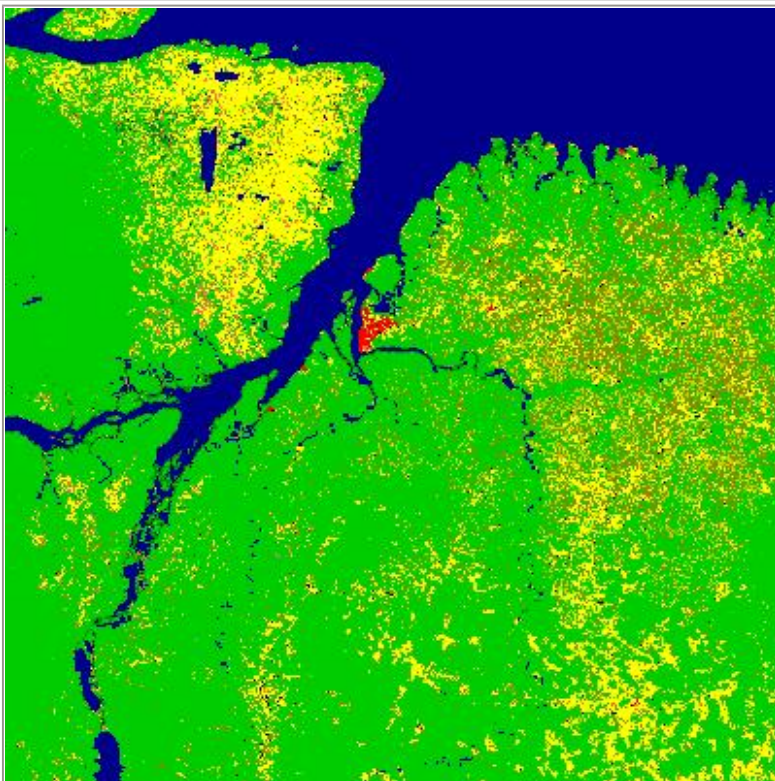
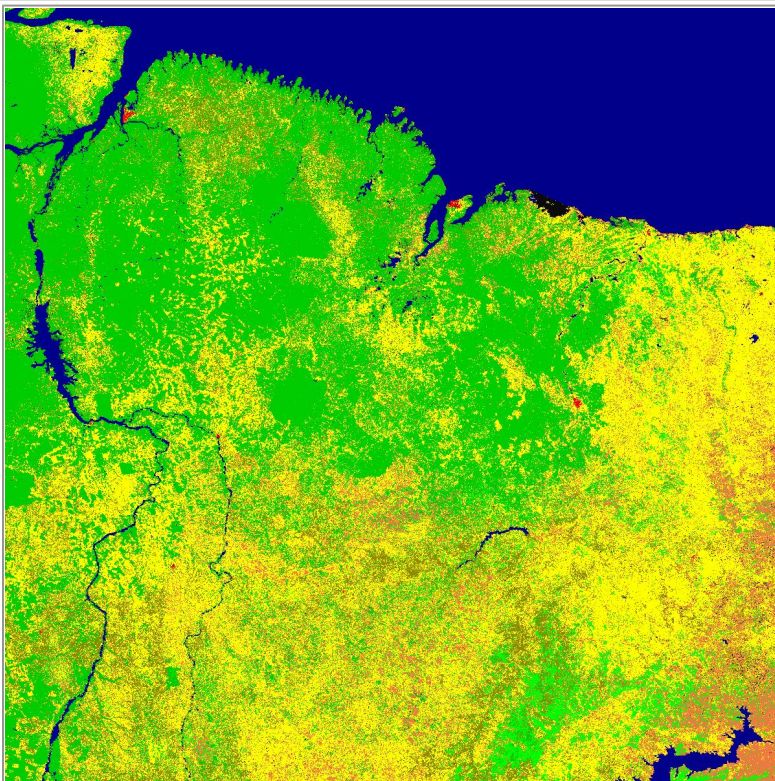
EDG Data Set Name

MODIS/Terra Land Cover Type Yearly L3 Global 1km SIN Grid

Granule Shortname

MOD12Q1

Version	Acquisition Range	Science Quality Status
V004	2001001: January 1 2001 - December 31 2001	Validated Stage 1



Data Set Characteristics

Area = Nominal 10° x 10° lat/long
 Size = 1200 x 1200 rows/columns
 File Size = ~22 MB
 Resolution = Nominal 1 kilometer
 Projection = Sinusoidal
 Data Type = 8-bit Unsigned Integer
 Data Format = HDF-EOS
 Science Data Sets (SDS) = 16

The images above represent land cover classification Type 5 in the yearly MODIS V004 Land Cover product. The image on the left displays tile h13v09 over the northeastern portion of Brazil where the Amazon River enters the Atlantic Ocean. The right-hand image is a subset centered on Belem (in the northwest corner of the large image), and emphasizes the vegetative mix of deciduous and grassy plants in the area.

LEGEND MOD12Q1 Land Cover Type 5 (PFT)

Land Cover	Class	Color
Fill Value	255	black
Water	0	blue
Evergreen needleleaf trees	1	dark green
Evergreen broadleaf trees	2	medium green
Deciduous needleleaf trees	3	green
Deciduous broadleaf trees	4	light green
Shrub	5	orange
Grass	6	yellow
Cereal crop	7	tan
Broadleaf crop	8	brown
Urban and built up	9	red

Snow and Ice	10	white
Barren or sparse vegetation	11	gray

Product Description

The Land Cover Classification product, MOD12Q1, identifies five classes of land cover. Land Cover Type 1 includes the 17 classes of land cover in the International Geosphere-Biosphere Programme (IGBP) global vegetation classification scheme. This scheme includes 11 natural vegetation classes, 3 developed land classes, one of which is a mosaic with natural vegetation, permanent snow or ice, barren or sparsely vegetated, and water. Additional Science Data Set layers for other classification schemes include the University of Maryland modification of the IGBP scheme (Land Cover Type 2), the MODIS LAI/fPAR (Land Cover Type 3) scheme, the MODIS Net Primary Production (Land Cover Type 4) scheme, and the Plant Functional Types (PFT) (Land Cover Type 5) provided in consideration of the Community Land Model (CLM) used in climate modeling. These classes are distinguished with a supervised decision tree classification method.

The MOD12 classification schemes are made up of multitemporal classes describing land cover properties as observed during the year (12 months of input data). Successive production of this "annual" product allows us to make new land cover maps with increasing accuracies as both classification techniques and the training site database mature. For inter-annual land cover change, users should use the Vegetation Cover Conversion product, [MOD44A](#), or, for intra-annual phenology, the Land Cover Dynamics product, MOD12Q2. The latter is expected to appear in the end of May 2004, as multiple years of reprocessed consistent MODIS data become available.

The data are available for the global extent of land area in 317 HDF-EOS file format files in nominal 10° tiles in Sinusoidal Grid projection.

NOTE: These products are validated to Stage 1. Product accuracy has been estimated using a small number of independent measurements obtained from selected locations and time periods and ground-truth/field program effort. Although there may be later improved versions, these data are ready for use in scientific publications.

SDS	UNITS	DATA TYPE-bit	FILL VALUE	VALID RANGE
*Land Cover Type 1 (IGBP)	Class #	8-bit unsigned	255	0, 254
*Land Cover Type 2 (UMD)	Class #	8-bit unsigned	255	0,254
*Land Cover Type 3 (LAI/FPAR)	Class #	8-bit unsigned	255	0,254
*Land Cover Type 4 (BGC)	Class #	8-bit unsigned	255	0,254
Land Cover Type 5 (PFT) see image above	Class #	8-bit unsigned	255	0,254
Land Cover Type 1 Assessment	Percent in integers	8-bit unsigned	255	0,254
Land Cover Type 2 Assessment	(not populated)	8-bit unsigned	255	0,254
Land Cover Type 3 Assessment	(not populated)	8-bit unsigned	255	0,254
Land Cover Type 4 Assessment	(not populated)	8-bit unsigned	255	0,254
Land Cover Type 5 Assessment	(not populated)	8-bit unsigned	255	0,254
**Land Cover QC (3D - x, y, QC)	Concatenated Flags	8-bit unsigned	255	0,254
Land Cover Type 1 Secondary	Class #	8-bit unsigned	255	0,254
Land Cover Type 1 Secondary Percent	(not populated)	8-bit unsigned	255	0,254
Land Cover Property 1	(not populated)	8-bit unsigned	255	0,254
Land Cover Property 2	(not populated)	8-bit unsigned	255	0,254
Land Cover Property 3	(not populated)	8-bit unsigned	255	0,254

***Land Cover Types**

Class	IGBP (Type 1)	UMD (Type 2)	LAI/FPAR (Type 3)	NPP (Type 4)
0	water	water	water	water
1	evergreen needleleaf forest	evergreen needleleaf forest	grasses/cereal crops	evergreen needleleaf vegetation
2	evergreen broadleaf forest	evergreen broadleaf forest	shrubs	evergreen broadleaf vegetation
3	deciduous needleleaf forest	deciduous needleleaf forestr	broadleaf crops	deciduous needleleaf vegetation
4	deciduous broadleaf forest	deciduous broadleaf forest	savanna	deciduous broadleaf vegetation
5	mixed forests	mixed forests	broadleaf forest	annual broadleaf vegetation
6	closed shrublands	closed shrublands	needleleaf forest	annual grass vegetation
7	open shrublands	open shrublands	unvegetated	non-vegetated land
8	woody savannas	woody savannas	urban	urban
9	savannas	savannas		
10	grasslands	grasslands		
11	permanent wetlands			
12	croplands	croplands		
13	urban and built-up	urban and built-up		
14	cropland/natural vegetation mosaic			
15	permanent snow and ice			
16	barren or sparsely vegetated	barren or sparsely vegetated		
254	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED

****Land Cover QA Bit Index:**

Bit 1-2	Mandatory QA	Bit 3-4	Quarters since last updated
processed, good quality	0	0	0
processed, see other quality	1	1	1
not processed due to cloud	2	2	2
not processed due to other	3	3	3

Bit 5-8	Land water mask
Shallow ocean	0
Land (Nothing else but land)	1
Ocean coastlines and lake	2
Shallow inland water	3
Ephemeral water	4
Deep inland water	5
Moderate or continental ocean	6
Deep ocean	7

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(<http://edcimswww.cr.usgs.gov/pub/imswelcome/>)

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Data Center: LPDAAC
Sensor: MODIS
Dataset: MODIS/Terra Land Cover Type Yearly L3 Global 1km SIN Grid
Geographic Extent: Type Lat/Long Range or Draw on Map
Temporal Extent: 2001-01-01 to present

Product Information

[Product Description](#)

(<http://modis-land.gsfc.nasa.gov/products/products.asp?ProdFamID=10>)

[User Guide](#)

(<http://geography.bu.edu/landcover/userguidelc/>)

[Algorithm Theoretical Basis Document \(ATBD\)](#)

(http://modis.gsfc.nasa.gov/data/atbd/land_atbd.html)

[MODIS Standard Data Products Catalog](#)

(<http://modis.gsfc.nasa.gov/data/dataproducts.html>)

[EOS Data Products Handbook Volume 1 \(2000\)](#)

(http://eosps0.gsfc.nasa.gov/eos_homepage/for_scientists/data_products/vol1.php)

Contact Information

[LP DAAC User Services](#)

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URL: <http://LPDAAC.usgs.gov/modis/mod12q1v4.asp>

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